

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P192484

Luminaire Tested: **4WSL-LD2-80-UPL8-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192484
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28106)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WSL-LD2-80-UPL8-UNV-L850-CD1-U
Description: 4FT Linear Wavestream System, 8% Uplight, L850
Light Source: (238) 5000K CCT, 80 CRI LEDS
EL236N0119D850
Ballast/Driver: OSRAM
OT85W1202772A0DIML

Summary

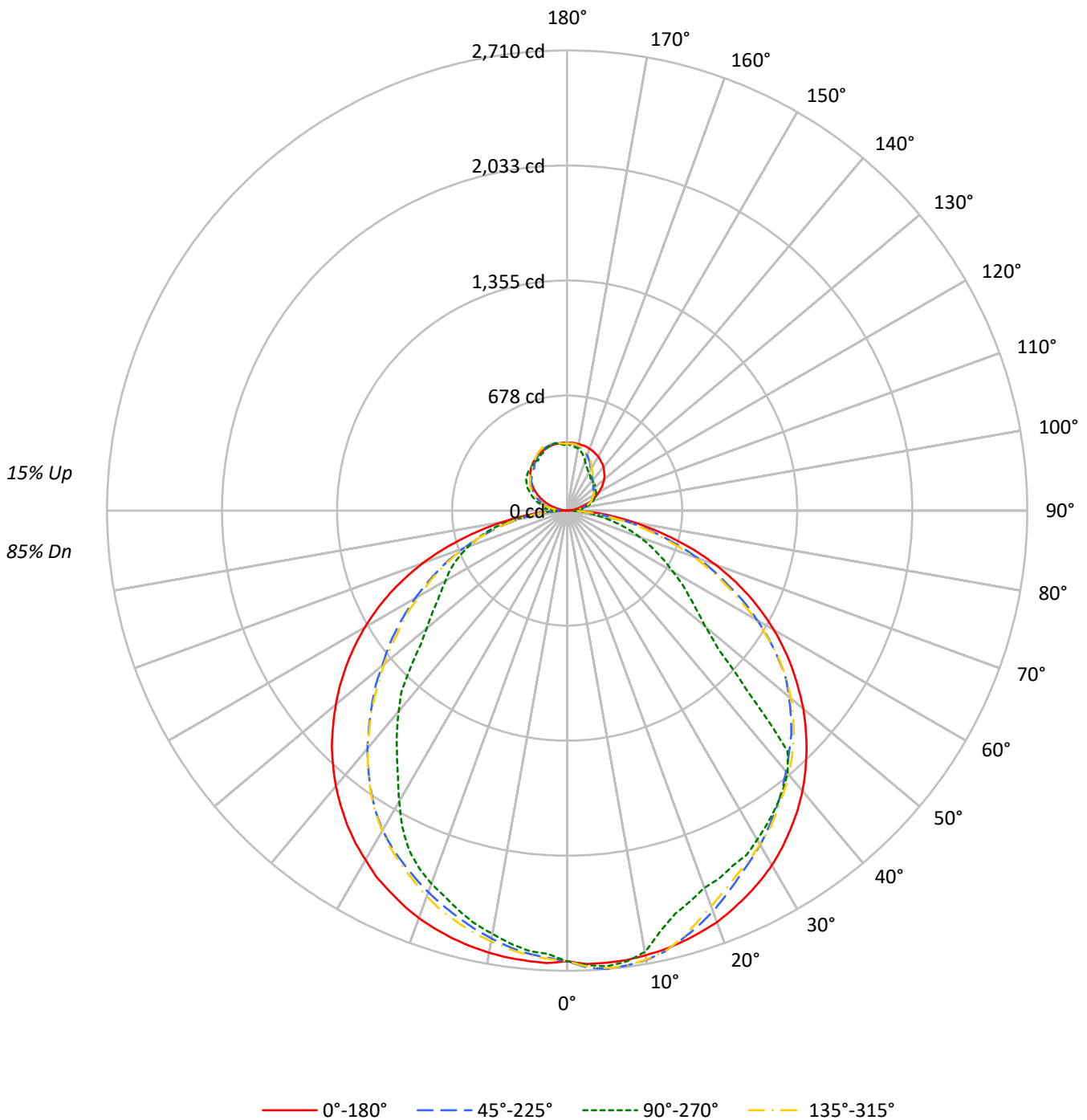
Lumens per Lamp: N/A
Luminaire Lumens: 8801.0 lumens
Efficiency: N/A
Efficacy: 115.8 lumens/watt
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 76
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	115	115	115	115	111	111	111	111	103	103	103	95	95	95	88	88	88	85
1	105	101	96	92	101	97	93	90	90	87	84	83	81	79	78	76	74	71
2	96	88	81	75	92	84	78	73	78	73	69	73	69	65	68	65	62	59
3	87	77	69	62	83	74	67	61	69	63	58	64	59	55	60	56	52	50
4	80	68	59	53	76	66	58	52	61	55	49	57	52	47	53	49	45	42
5	73	61	52	45	70	59	51	44	55	48	43	51	45	41	48	43	39	37
6	68	55	46	40	65	53	45	39	50	43	37	47	40	36	44	38	34	32
7	63	49	41	35	60	48	40	34	45	38	33	42	36	32	40	35	31	28
8	58	45	37	31	56	44	36	30	41	34	29	39	33	28	37	31	27	25
9	54	41	33	28	52	40	33	27	38	31	26	36	30	26	34	29	25	23
10	51	38	30	25	49	37	30	25	35	28	24	33	27	23	31	26	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	15032	15032	15032	15032
5°	15203	15316	15138	14798
10°	15297	15182	15215	14561
15°	15412	14413	15296	14330
20°	15551	14250	15398	14095
25°	15645	14420	15467	13780
30°	15778	14644	15536	12935
35°	15856	14795	15620	12083
40°	15946	14938	15673	11408
45°	15978	12018	15705	10424
50°	15999	9339	15674	9514
55°	15966	8642	15657	9231
60°	15933	8143	15579	9367
65°	15766	7807	15424	9825
70°	15340	7528	14964	10258
75°	14363	7090	13930	10820
80°	13069	6489	12512	10287
85°	12740	7020	11447	9230



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.2	2.9
10°-20°	716.3	8.1
20°-30°	1084.3	12.3
30°-40°	1309.3	14.9
40°-50°	1336.7	15.2
50°-60°	1168.7	13.3
60°-70°	905.8	10.3
70°-80°	544.6	6.2
80°-90°	168.1	1.9
90°-100°	70.9	0.8
100°-110°	135.5	1.5
110°-120°	184.1	2.1
120°-130°	209.3	2.4
130°-140°	212.3	2.4
140°-150°	195.4	2.2
150°-160°	161.2	1.8
160°-170°	108.4	1.2
170°-180°	37.7	0.4
0°-30°	2052.8	23.3
0°-40°	3362.2	38.2
0°-60°	5867.6	66.7
0°-90°	7486.2	85.1
90°-120°	390.5	4.4
90°-150°	1007.5	11.4
90°-180°	1315.0	14.9
0°-180°	8801.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2653	2653	2653	2653	2653	
5°	2673	2693	2662	2602	2673	255
15°	2628	2457	2608	2443	2628	743
25°	2503	2307	2474	2204	2503	1155
35°	2293	2139	2258	1747	2293	1435
45°	1994	1500	1960	1301	1994	1538
55°	1616	875	1585	935	1616	1445
65°	1176	582	1151	733	1176	1161
75°	656	324	636	494	656	696
85°	196	108	176	142	196	198
90°	3	60	3	68	3	13
95°	17	82	17	131	17	22
105°	91	139	88	176	91	97
115°	176	179	173	239	176	174
125°	253	204	247	293	253	224
135°	310	224	307	324	310	239
145°	349	239	347	344	349	220
155°	378	278	375	364	378	174
165°	395	347	392	395	395	111
175°	401	381	401	392	401	38
180°	395	395	395	395	395	



TEST NUMBER: P192484

CATALOG NUMBER: 4WSL-LD2-80-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4
2.5°	2673.3	2659.1	2693.2	2698.8	2678.9	2684.6	2687.5	2656.2	2667.6	2625.0	2636.3
5°	2673.3	2670.4	2710.2	2704.5	2693.2	2696.0	2704.5	2667.6	2661.9	2610.8	2619.3
7.5°	2670.4	2676.1	2701.7	2696.0	2678.9	2687.5	2701.7	2673.3	2656.2	2596.6	2593.7
10°	2659.1	2667.6	2687.5	2670.4	2639.2	2653.4	2684.6	2667.6	2644.9	2573.8	2559.6
12.5°	2647.7	2653.4	2659.1	2588.0	2536.9	2571.0	2659.1	2653.4	2627.8	2548.3	2522.7
15°	2627.8	2636.3	2613.6	2511.3	2457.4	2491.5	2607.9	2630.7	2607.9	2511.3	2480.1
17.5°	2605.1	2613.6	2565.3	2451.7	2411.9	2429.0	2542.6	2602.2	2582.4	2477.2	2437.5
20°	2579.5	2588.0	2511.3	2389.2	2363.6	2377.8	2480.1	2571.0	2554.0	2437.5	2392.0
22.5°	2542.6	2556.8	2448.8	2346.6	2343.7	2343.7	2420.4	2534.1	2517.0	2389.2	2340.9
25°	2502.8	2517.0	2386.3	2306.8	2306.8	2306.8	2366.5	2485.8	2474.4	2338.0	2289.7
27.5°	2460.2	2474.4	2329.5	2278.4	2286.9	2272.7	2321.0	2431.8	2431.8	2286.9	2235.8
30°	2411.9	2426.1	2272.7	2232.9	2238.6	2232.9	2269.9	2375.0	2375.0	2227.2	2173.3
32.5°	2355.1	2369.3	2210.2	2179.0	2190.3	2184.6	2221.6	2318.2	2321.0	2164.8	2099.4
35°	2292.6	2309.6	2144.9	2127.8	2139.2	2130.7	2156.2	2258.5	2258.5	2096.6	2014.2
37.5°	2227.2	2244.3	2076.7	2071.0	2082.4	2073.8	2093.7	2196.0	2190.3	2025.5	1923.3
40°	2156.2	2176.1	2005.7	2005.7	2019.9	2014.2	2031.2	2130.7	2119.3	1954.5	1829.5
42.5°	2076.7	2102.3	1934.6	1937.5	1920.4	1943.2	1960.2	2062.5	2039.8	1875.0	1727.3
45°	1994.3	2025.5	1866.5	1815.3	1500.0	1795.4	1886.3	1994.3	1960.2	1795.4	1627.8
47.5°	1906.2	1946.0	1786.9	1599.4	1207.4	1573.8	1806.8	1909.1	1869.3	1710.2	1531.2
50°	1815.3	1860.8	1704.5	1414.8	1059.6	1386.3	1718.7	1823.8	1778.4	1622.1	1420.4
52.5°	1715.9	1767.0	1625.0	1252.8	960.2	1227.3	1627.8	1741.5	1684.6	1528.4	1329.5
55°	1616.5	1670.4	1517.0	1113.6	875.0	1090.9	1522.7	1636.3	1585.2	1431.8	1230.1
57.5°	1514.2	1568.2	1409.1	991.5	801.1	968.7	1403.4	1539.8	1482.9	1332.4	1130.7
60°	1406.2	1460.2	1292.6	880.7	718.7	863.6	1281.2	1431.8	1375.0	1230.1	1034.1
62.5°	1292.6	1346.6	1181.8	778.4	650.6	764.2	1147.7	1326.7	1264.2	1122.1	934.6
65°	1176.1	1215.9	1051.1	681.8	582.4	670.4	1028.4	1196.0	1150.6	1008.5	840.9
67.5°	1054.0	1093.7	937.5	596.6	517.0	585.2	911.9	1079.5	1028.4	897.7	747.2
70°	926.1	960.2	818.2	514.2	454.5	505.7	789.8	948.9	903.4	781.2	647.7
72.5°	795.4	826.7	690.3	437.5	389.2	431.8	661.9	818.2	772.7	659.1	556.8
75°	656.2	687.5	571.0	360.8	323.9	355.1	545.4	679.0	636.4	542.6	463.1
77.5°	525.6	562.5	451.7	284.1	258.5	278.4	429.0	548.3	505.7	434.7	372.2
80°	400.6	431.8	335.2	215.9	198.9	213.1	312.5	417.6	383.5	335.2	289.8
82.5°	289.8	306.8	230.1	159.1	150.6	156.2	213.1	295.5	278.4	241.5	213.1
85°	196.0	193.2	142.0	110.8	108.0	110.8	127.8	179.0	176.1	161.9	136.4
87.5°	82.4	76.7	65.3	45.5	39.8	42.6	51.1	68.2	65.3	68.2	65.3
90°	2.8	28.4	45.5	56.8	59.7	56.8	45.5	28.4	2.8	31.2	51.1
92.5°	5.7	36.9	54.0	62.5	68.2	62.5	51.1	36.9	5.7	48.3	51.1
95°	17.0	51.1	62.5	76.7	82.4	76.7	62.5	48.3	17.0	42.6	76.7
97.5°	34.1	65.3	73.9	85.2	88.1	82.4	71.0	65.3	31.2	76.7	79.5
100°	51.1	82.4	96.6	96.6	99.4	96.6	93.7	79.5	48.3	85.2	96.6
102.5°	71.0	93.7	110.8	119.3	119.3	119.3	110.8	93.7	65.3	105.1	133.5
105°	90.9	102.3	122.2	133.5	139.2	133.5	122.2	105.1	88.1	122.2	142.0
107.5°	113.6	110.8	133.5	144.9	150.6	144.9	133.5	113.6	108.0	136.4	159.1
110°	136.4	122.2	144.9	156.2	159.1	156.2	144.9	122.2	130.7	153.4	176.1



TEST NUMBER: P192484

CATALOG NUMBER: 4WSL-LD2-80-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	156.2	130.7	156.2	167.6	170.5	167.6	156.2	133.5	150.6	164.8	193.2
115°	176.1	139.2	161.9	176.1	179.0	176.1	161.9	142.0	173.3	179.0	207.4
117.5°	196.0	150.6	167.6	184.7	187.5	184.7	170.5	153.4	193.2	196.0	221.6
120°	215.9	164.8	176.1	190.3	196.0	193.2	176.1	167.6	210.2	210.2	233.0
122.5°	233.0	176.1	184.7	196.0	201.7	196.0	184.7	181.8	230.1	224.4	247.2
125°	252.8	187.5	190.3	201.7	204.5	201.7	193.2	190.3	247.2	235.8	255.7
127.5°	267.0	201.7	196.0	207.4	210.2	207.4	198.9	204.5	264.2	258.5	264.2
130°	284.1	215.9	201.7	213.1	215.9	215.9	201.7	221.6	278.4	275.6	275.6
132.5°	298.3	230.1	207.4	218.7	221.6	221.6	210.2	233.0	292.6	289.8	284.1
135°	309.7	250.0	218.7	218.7	224.4	224.4	221.6	252.8	306.8	304.0	298.3
137.5°	321.0	267.0	227.3	221.6	224.4	224.4	233.0	269.9	318.2	318.2	306.8
140°	332.4	284.1	233.0	227.3	227.3	233.0	241.5	286.9	329.5	329.5	309.7
142.5°	343.7	298.3	241.5	235.8	230.1	241.5	250.0	304.0	338.1	340.9	318.2
145°	349.4	312.5	252.8	244.3	238.6	252.8	264.2	318.2	346.6	352.3	335.2
147.5°	358.0	326.7	267.0	250.0	250.0	258.5	275.6	329.5	355.1	360.8	343.7
150°	366.5	338.1	278.4	258.5	252.8	267.0	286.9	340.9	363.6	369.3	355.1
152.5°	372.2	349.4	295.5	269.9	264.2	281.2	306.8	349.4	369.3	375.0	366.5
155°	377.8	358.0	315.3	281.2	278.4	292.6	323.9	358.0	375.0	380.7	375.0
157.5°	383.5	366.5	329.5	298.3	286.9	309.7	338.1	369.3	380.7	386.4	383.5
160°	386.4	372.2	346.6	315.3	309.7	329.5	352.3	372.2	383.5	392.0	389.2
162.5°	392.0	377.8	358.0	335.2	329.5	346.6	363.6	380.7	389.2	394.9	394.9
165°	394.9	383.5	369.3	352.3	346.6	363.6	372.2	386.4	392.0	394.9	397.7
167.5°	394.9	389.2	377.8	363.6	360.8	375.0	383.5	392.0	394.9	394.9	400.6
170°	397.7	392.0	383.5	375.0	372.2	383.5	386.4	394.9	397.7	394.9	403.4
172.5°	397.7	394.9	389.2	380.7	375.0	389.2	392.0	394.9	397.7	394.9	400.6
175°	400.6	394.9	394.9	389.2	380.7	394.9	394.9	394.9	400.6	394.9	397.7
177.5°	400.6	394.9	394.9	392.0	386.4	394.9	394.9	394.9	400.6	394.9	397.7
180°	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9	394.9



TEST NUMBER: P192484

CATALOG NUMBER: 4WSL-LD2-80-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2653.4	2653.4	2653.4	2653.4	2653.4	2653.4
2.5°	2633.5	2613.6	2619.3	2642.0	2633.5	2673.3
5°	2613.6	2602.2	2602.2	2627.8	2625.0	2673.3
7.5°	2582.4	2571.0	2576.7	2605.1	2610.8	2670.4
10°	2545.4	2531.2	2536.9	2576.7	2590.9	2659.1
12.5°	2505.7	2494.3	2500.0	2545.4	2565.3	2647.7
15°	2460.2	2443.2	2460.2	2508.5	2534.1	2627.8
17.5°	2409.1	2386.3	2406.2	2468.7	2500.0	2605.1
20°	2357.9	2338.0	2349.4	2417.6	2463.0	2579.5
22.5°	2306.8	2278.4	2289.7	2360.8	2417.6	2542.6
25°	2247.1	2204.5	2227.2	2304.0	2369.3	2502.8
27.5°	2167.6	2102.3	2150.5	2247.1	2312.5	2460.2
30°	2062.5	1977.3	2048.3	2179.0	2252.8	2411.9
32.5°	1946.0	1855.1	1934.6	2102.3	2190.3	2355.1
35°	1829.5	1747.1	1818.2	2017.0	2125.0	2292.6
37.5°	1718.7	1647.7	1713.1	1926.1	2056.8	2227.2
40°	1613.6	1542.6	1610.8	1826.7	1982.9	2156.2
42.5°	1508.5	1443.2	1508.5	1721.6	1906.2	2076.7
45°	1403.4	1301.1	1397.7	1619.3	1823.8	1994.3
47.5°	1289.8	1170.4	1281.2	1508.5	1735.8	1906.2
50°	1181.8	1079.5	1176.1	1406.2	1644.9	1815.3
52.5°	1088.1	1005.7	1082.4	1301.1	1551.1	1715.9
55°	1000.0	934.6	1000.0	1198.9	1451.7	1616.5
57.5°	920.4	877.8	923.3	1110.8	1349.4	1514.2
60°	852.3	826.7	855.1	1002.8	1247.1	1406.2
62.5°	786.9	784.1	789.8	917.6	1139.2	1292.6
65°	718.7	732.9	718.7	826.7	1031.2	1176.1
67.5°	650.6	679.0	656.2	735.8	914.8	1054.0
70°	588.1	619.3	588.1	642.0	798.3	926.1
72.5°	517.0	556.8	517.0	554.0	676.1	795.4
75°	448.9	494.3	451.7	463.1	559.7	656.2
77.5°	375.0	417.6	383.5	375.0	451.7	525.6
80°	298.3	315.3	298.3	295.5	349.4	400.6
82.5°	207.4	221.6	207.4	215.9	255.7	289.8
85°	136.4	142.0	136.4	139.2	170.5	196.0
87.5°	56.8	56.8	56.8	71.0	76.7	82.4
90°	62.5	68.2	62.5	51.1	31.2	2.8
92.5°	65.3	71.0	65.3	56.8	36.9	5.7
95°	116.5	130.7	110.8	71.0	59.7	17.0
97.5°	93.7	102.3	96.6	82.4	73.9	34.1
100°	110.8	119.3	110.8	116.5	90.9	51.1
102.5°	130.7	136.4	133.5	136.4	110.8	71.0
105°	170.5	176.1	170.5	147.7	127.8	90.9
107.5°	181.8	196.0	184.7	164.8	144.9	113.6
110°	196.0	207.4	198.9	181.8	159.1	136.4



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	210.2	224.4	215.9	201.7	170.5	156.2
115°	227.3	238.6	233.0	215.9	187.5	176.1
117.5°	244.3	252.8	247.2	227.3	204.5	196.0
120°	258.5	269.9	264.2	241.5	218.7	215.9
122.5°	269.9	281.2	275.6	255.7	233.0	233.0
125°	281.2	292.6	286.9	267.0	244.3	252.8
127.5°	289.8	304.0	298.3	275.6	269.9	267.0
130°	301.1	309.7	306.8	284.1	284.1	284.1
132.5°	306.8	318.2	312.5	295.5	301.1	298.3
135°	309.7	323.9	318.2	309.7	315.3	309.7
137.5°	315.3	326.7	323.9	318.2	329.5	321.0
140°	323.9	329.5	332.4	323.9	340.9	332.4
142.5°	332.4	335.2	340.9	332.4	352.3	343.7
145°	338.1	343.7	349.4	349.4	360.8	349.4
147.5°	338.1	346.6	346.6	355.1	372.2	358.0
150°	346.6	340.9	358.0	366.5	377.8	366.5
152.5°	358.0	355.1	369.3	377.8	383.5	372.2
155°	360.8	363.6	372.2	386.4	389.2	377.8
157.5°	372.2	369.3	383.5	394.9	394.9	383.5
160°	380.7	380.7	394.9	400.6	397.7	386.4
162.5°	389.2	389.2	403.4	403.4	400.6	392.0
165°	394.9	394.9	409.1	406.2	400.6	394.9
167.5°	397.7	400.6	411.9	409.1	400.6	394.9
170°	400.6	400.6	411.9	406.2	400.6	397.7
172.5°	400.6	397.7	409.1	403.4	397.7	397.7
175°	397.7	392.0	403.4	397.7	397.7	400.6
177.5°	394.9	386.4	394.9	394.9	397.7	400.6
180°	394.9	394.9	394.9	394.9	394.9	394.9

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